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MAR 05 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
	:	
Naoki TAKAHASHI, et al.	:	Confirmation Number: 9518
	:	
Application No.: 09/970,084	:	
Patent No.: 7,102,786	:	Group Art Unit: 2625
	:	
Filed: October 04, 2001	:	Examiner: Charlotte M. Baker
	:	

For: IMAGE READING APPARATUS AND PROCESSING APPARATUS

REQUEST FOR CERTIFICATE OF CORRECTION UNDER 37 CFR 1.322

Mail Stop COC
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Certificate
MAR 0 7 2007
of Correction

Sir:

In reviewing the above-identified patent, a printing error was discovered therein requiring correction in order to conform the Official Record in the application.

The error noted is set forth on the two attached copies of form PTO-1050 Rev. 2-93 in the manner required by the Commissioner's Notice.

Specifically, under "The invention claimed is:", column 21, line 43, change "edge points thought to document edge points and an" to – edge points thought to **be** document edge points and an –. For your immediate reference attached is a photocopy of the amendment filed January 9, 2006.

The change requested herein occurred as a result of printing the Letters Patent and the Certificate should be issued without expense under Rule 322 of the Rules of Practice. Accordingly, Applicants request issuance of the Certificate of Correction.
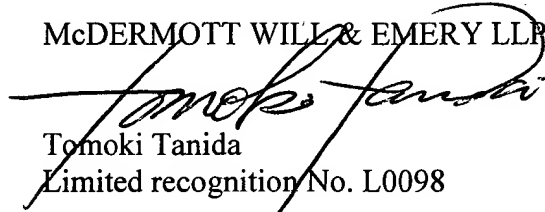
MAR – 7 2007

Please charge any shortage in fees due in connection with the filing of this paper to Deposit

Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Tomoki Tanida
Limited recognition No. L0098

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Date: March 5, 2007

**Please recognize our Customer No. 20277
as our correspondence address.**

MAR - 7 2007

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.   : 7102786
DATED   : September 05, 2006
INVENTOR(S)   : Naoki TAKAHASHI, et al.

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Under "The invention claimed is:",

Column 21, line 43, change "edge points thought to document edge points and an" to – edge points thought to **be** document edge points and an –

MAILING ADDRESS OF SENDER:
McDermott Will & Emery LLP
600 13th Street, NW
Washington, DC 20005
USA

PATENT NO.
7,102,786

No. of add'l copies
@ 50¢ per page

{ _____

FORM **PTO 1050** (Rev. 2-93)

MAR – 7 2007

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.   : 7102786

DATED   : September 05, 2006

INVENTOR(S)   : Naoki TAKAHASHI, et al.

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Under "The invention claimed is:",

Column 21, line 43, change "edge points thought to document edge points and an" to – edge points thought to **be** document edge points and an –

MAILING ADDRESS OF SENDER:
McDermott Will & Emery LLP
600 13th Street, NW
Washington, DC 20005
USA

PATENT NO.
7,102,786

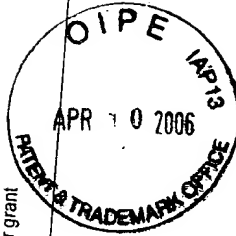No. of add'l copies
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FORM **PTO 1050** (Rev. 2-93)

MAR – 7 2007

Applicant: **Naoki TAKAHASHI, et al.**

Title: **IMAGE READING APPARATUS AND PROCESSING APPARATUS**

Docket No. **050023-0153**   Serial No. **09/970,084**   Patent No.

Date Sent: **4/10/2006** ☒ Hand Carried ☐ Fax ☐ Electronic ☐ Cert. of Mailing ☐ Express Mail No.

☐ Transmittal Letter

☐ New Patent App ☐ Utility ☐ Design ☐ Cont. ☐ CIP ☐ Div. ☐ PCT ☐ 1st Class Mail

☐ Other:

_____ pages of Specification
_____ pages of Claims
_____ pages of Abstract
_____ pages of Formal/Informal Drawings

☐ Small Entity ☐ Large Entity
☐ Declaration/Power of Attorney
☐ Recordation of Assignment/Security Agreement
☐ Information Disclosure Statement
_____ Form PTO 1449
_____ References attached

☐ Preliminary Amendment
☐ Response to Missing Parts Notice
☐ Resp. to Notice to Correct App. Papers
☐ Certified Copy of Priority Doc.
☐ Claim for Convention Priority
☒ Response/Amendment to Office Action of _____1/9/06_____
☐ Request for _____ month Extension of Time

☐ Letter submitting _____ pages of drawings
☐ Req. for Approval of Drawing Amendments
☐ Req. for Oral Hearing
☐ Not. of Appeal ☐ Appeal Brief
☐ Rule 312 Amendment/Letter
☐ Req. for Acknowledgement of Cited Art
☐ Issue Fee
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☐ Req. for Certificate of Correction
☐ Maintenance Fee for _____ years after grant
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☐ Status Inquiry
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☐ RCE ☐ Prov
☐ Reply Brief

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Docket No.: 050023-0153   **PATENT**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	: Customer Number: 20277
	:
Naoki TAKAHASHI, et al.	: Confirmation Number: 9518
	:
Application No.: 09/970,084	: Group Art Unit: 2626
	:
Filed: October 04, 2001	: Examiner: Charlotte M. Baker
	:

For: IMAGE READING APPARATUS AND PROCESSING APPARATUS

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith is an Amendment in the above-identified application.
☐   No additional fee is required.
☐   Applicant is entitled to small entity status under 37 CFR 1.27
☐   Also attached:

The fee has been calculated as shown below:

	NO. OF CLAIMS	HIGHEST PREVIOUSLY PAID FOR	EXTRA CLAIMS	RATE	FEE
Total Claims	24	24	0	$50.00 =	$0.00
Independent Claims	9	4	5	$200.00 =	$1000.00
		Multiple dependent claims newly presented			$0.00
		Fee for extension of time			$0.00
					$0.00
				Total of Above Calculations	$1000.00

☒   Please charge my Deposit Account No. <u>500417</u> in the amount of $1000.00. An additional copy of this transmittal sheet is submitted herewith.

☒   The Commissioner is hereby authorized to charge payment of any fees associated with this communication or credit any overpayment, to Deposit Account No. 500417, including any filing fees under 37 CFR 1.16 for presentation of extra claims and any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

Tomoki Tanida
Limited Recognition No. L0098
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Date: April 10, 2006
WDC99 1219885-1.050023.0153

MAR - 7 2007

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of	:	Customer Number: 20277
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Naoki TAKAHASHI, et al.	:	Confirmation Number: 9518
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For: IMAGE READING APPARATUS AND PROCESSING APPARATUS		

AMENDMENT

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Office Action of January 9, 2006, please amend the above-identified

application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this
paper.

Remarks begin on page 15 of this paper.

'MAR - 7 2007

MAR - 7 2007'

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An image reading apparatus for processing, for each reading line, image data outputted from an image sensor, said apparatus comprising:

contour detecting means for detecting, for each object reading line, ~~a pixel~~ pixels with the quantity of change in density higher than a threshold value as ~~a probable edge point~~ probable edge points thought to be [[a]] document edge points ~~point~~ and an edge point of a projecting area where a light source outside the image reading apparatus is projected, and

contour correction means for determining whether [[the]] each probable edge point is a ~~document edge point indicating the position of a document edge~~ the edge point of the projecting area or not, on the basis of the position of said probable edge points ~~point~~, said contour correction means recognizing the probable edge points except the edge point of the projecting area as the document edge points ~~point as the document edge point, upon determining the probable edge point to be the document edge point~~.

2. (Previously Presented) The image reading apparatus of claim 1 wherein said contour detecting means is provided with density change calculating means for working out the quantity of change in density on the basis of the image density of pixels around an object pixel.

3. (Currently Amended) The image reading apparatus of claim 2 wherein said contour detecting means is provided with judgement means for detecting the object pixel as

[[said]] a probable edge point if the values of the respective pixels are identical when the densities of a specific number of consecutive pixels either in the direction of scanning or opposite direction of scanning are binarized on a specific slice level.

4. (Currently Amended)   [[The]] An image reading apparatus of claim 3 for processing, for each reading line, image data outputted from an image sensor, said apparatus comprising:

contour detecting means for detecting, for each object reading line, a pixel with the quantity of change in density higher than a threshold value as a probable edge point thought to be a document edge point, and

contour correction means for determining whether the probable edge point is a document edge point indicating the position of a document edge on the basis of the position of said probable edge point, said contour correction means recognizing the probable edge point as the document edge point, upon determining the probable edge point to be the document edge point, wherein

said contour detecting means is provided with density change calculating means for working out the quantity of change in density on the basis of the image density of pixels around an object pixel, and

said contour detecting means is further provided with judgement means for detecting the object pixel as said probable edge point if the values of the respective pixels are identical when the densities of a specific number of consecutive pixels either in the direction of scanning or opposite direction of scanning are binarized on a specific slice level, wherein

3

when each reading line is scanned in a specific direction and the density values of a specific number of consecutive pixels in the opposite direction of scanning from said probable edge point are binarized on a specific slice level, said judgement means recognizes said probable edge point to which the values of the respective pixels are identical and judges as a first probable edge point the probable edge point first recognized out of recognized probable edge points, and

~~wherein~~ when each reading line is scanned in a specific direction and the density values of a specific number of consecutive pixels in the direction of scanning from said probable edge point are binarized on a specific slice level, said judgement means recognizes said probable edge point to which the values for the respective pixels are identical and judges as a second probable edge point the probable edge point first recognized out of recognized probable edge points.

5. (Currently Amended)   [[The]] <u>An</u> image reading apparatus ~~of claim 3~~ <u>for processing, for each reading line, image data outputted from an image sensor, said apparatus comprising:</u>

<u>contour detecting means for detecting, for each object reading line, a pixel with the quantity of change in density higher than a threshold value as a probable edge point thought to be a document edge point, and</u>

<u>contour correction means for determining whether the probable edge point is a document edge point indicating the position of a document edge on the basis of the position of said probable edge point, said contour correction means recognizing the probable edge point as the document edge point, upon determining the probable edge point to be the document edge point, wherein</u>

said contour detecting means is provided with density change calculating means for working out the quantity of change in density on the basis of the image density of pixels around an object pixel, and

said contour detecting means is further provided with judgement means for detecting the object pixel as said probable edge point if the values of the respective pixels are identical when the densities of a specific number of consecutive pixels either in the direction of scanning or opposite direction of scanning are binarized on a specific slice level, wherein

when the densities of a specific number of consecutive pixels either in the scanning direction or the opposite direction of scanning from the object pixel are binarized on a specific slice level in an object image of which the density change quantity is regarded by said density change calculating means as less than said threshold value and not lower than a second threshold value which is less than said threshold value and in case the values of the respective pixels after binarization are identical, said judgement means detects said pixels as tentative probable edge points.

6. (Previously Presented)   The image reading apparatus of claim 5 wherein, when each reading line is scanned in a specific direction and the density values of a specific number of consecutive pixels in the opposite direction of scanning from each tentative probable edge point are binarized on a specific slice level, said judgement means perceives said tentative probable edge point to which the values of the respective pixels after binarization are identical and judges as a first tentative probable edge point the tentative probable edge point first recognized out of said recognized tentative probable edge points, and

when each reading line is scanned in a specific direction and the density values of a specific number of consecutive pixels in the direction of scanning from each tentative probable edge point are binarized on a specific slice level, said judgement means perceives said tentative probable edge point to which the values of the respective pixels after binarization are identical and judges as a second tentative probable edge point the probable edge point last perceived out of said tentative perceived probable edge points, and at the same time,

when said second tentative probable edge point is not detected on the reading line to which said first tentative probable edge point belongs, said judgement means regards said first tentative probable edge point as a first probable edge point, and

when said first tentative probable edge point is not detected on the reading line to which said second tentative probable edge point belongs, said judgement means regards said second tentative probable edge point as a second probable edge point.

7. (Currently Amended)   The image reading apparatus of claim 1 wherein said contour correction means determines as permissible scope a scope of a specific distance on an object reading line on the basis of a straight line passing through two probable edge points detected on separate reading lines between which a specific number of reading lines are intervened, and recognizes a probable edge point on the object reading line in said permissible scope as [[said]] a document edge point.

8. (Currently Amended)   The image reading apparatus of claim 1 wherein said contour correction means determines as permissible scope a scope of a specific distance on an object reading line on the basis of a probable edge point detected on a reading line separated

6

from the object reading line by a specific number of reading lines, and recognizes said probable

edge point as [[said]] a document edge point when said probable edge point on the object reading

line is present in said permissible scope.

9. (Currently Amended)   [[The]] An image reading apparatus of claim 1 for

processing, for each reading line, image data outputted from an image sensor, said apparatus

comprising:

contour detecting means for detecting, for each object reading line, a pixel with the

quantity of change in density higher than a threshold value as a probable edge point thought to be

a document edge point, and

contour correction means for determining whether the probable edge point is a document

edge point indicating the position of a document edge on the basis of the position of said

probable edge point, said contour correction means recognizing the probable edge point as the

document edge point, upon determining the probable edge point to be the document edge point,

wherein

said contour correction means works out the gradients of a first permissible scope-setting

straight line passing through an object probable edge point out of permissible scope-setting

straight lines passing through two probable edge points separated from each other by a specific

number of reading lines, a second permissible scope-setting straight line passing through said

probable edge point detected on a second reading line separated from the reading line to which

said object probable edge point belongs, by one or a plurality of reading lines, and a third

permissible scope-setting straight line passing through said probable edge point detected on a

MAR - 7 2007

third reading line separated from the reading line to which said object probable edge point belongs, by one or a plurality of reading lines,

determines a permissible scope on the basis of a gradient difference value between the second permissible scope-setting straight line and the first permissible scope-setting straight line and a gradient difference value between the third permissible scope-setting straight line and the second permissible scope-setting straight line, and

in case the object probable edge point is present in the permissible scope, recognizes said object probable edge point as said document edge point.

10. (Currently Amended)   The image reading apparatus of claim 1 wherein in a reading line where [[said]] any document edge point is not recognized, said contour correction means recognizes a specific pixel belonging to said reading line as [[said]] a document edge point on the basis of document edge points recognized on other reading lines.

11. (Currently Amended)   [[The]] An image reading apparatus of claim 10 for processing, for each reading line, image data outputted from an image sensor, said apparatus comprising:

contour detecting means for detecting, for each object reading line, a pixel with the quantity of change in density higher than a threshold value as a probable edge point thought to be a document edge point, and

contour correction means for determining whether the probable edge point is a document edge point indicating the position of a document edge on the basis of the position of said probable edge point, said contour correction means recognizing the probable edge point as the

8

document edge point, upon determining the probable edge point to be the document edge point, wherein

in a reading line where said document edge point is not recognized, said contour correction means recognizes a specific pixel belonging to said reading line as said document edge point on the basis of document edge points recognized on other reading lines, wherein

said contour correction means recognizes as said document edge point a pixel located at the intersection point of a straight line passing through a document edge point recognized on one or a plurality of reading lines except for an object reading line and the object reading line.

12. (Currently Amended)   The image reading apparatus of claim 1 wherein said contour correction means acquires positional information on said probable edge points point by scanning image data in one or a plurality of directions, said image data outputted from said image sensor, and recognizes said document edge points point on the basis of positional information acquired by scanning in one direction or in different directions.

13. (Currently Amended)   The image reading apparatus of claim 12 wherein when [[said]] any probable edge point is not detected on a specific number of consecutive reading lines counted from the object reading line in a specific direction where [[said]] a probable edge point is detected, said contour correction means scans the image data in an opposite direction, said image data outputted from said image sensor.

MAR - 7 2007

14. (Currently Amended)   [[The]] An image reading apparatus of claim 13 for

processing, for each reading line, image data outputted from an image sensor, said apparatus

comprising:

contour detecting means for detecting, for each object reading line, a pixel with the

quantity of change in density higher than a threshold value as a probable edge point thought to be

a document edge point, and

contour correction means for determining whether the probable edge point is a document

edge point indicating the position of a document edge on the basis of the position of said

probable edge point, said contour correction means recognizing the probable edge point as the

document edge point, upon determining the probable edge point to be the document edge point,

wherein

said contour correction means acquires positional information on said probable edge

point by scanning image data in one or a plurality of directions, said image data outputted from

said image sensor, and recognizes said document edge point on the basis of positional

information acquired by scanning in one direction or in different directions, and

when said probable edge point is not detected on a specific number of consecutive

reading lines counted from the object reading line in a specific direction where said probable

edge point is detected, said contour correction means scans the image data in an opposite

direction, said image data outputted from said image sensor, and

said contour correction means recognizes as said document edge point a pixel located at

the intersection point between the object reading line and a straight line passing through one or a

plurality of said document edge points recognized by scanning in a specific direction or a straight

MAR - 7 2007

line passing through one or a plurality of said document edge points recognized by scanning in the other direction.

15. (Currently Amended)   The image reading apparatus of claim 1 which comprises thinning out means for recognizing a representative value on the basis of positional information on said probable edge points point detected on one or a plurality of reading lines and

contour correction means for recognizing the document edge points point on the basis of said representative value.

16. (Previously Presented)   The image reading apparatus of claim 15 wherein said representative value is a middle point between two probable edge points.

17. (Currently Amended)   The image reading apparatus of claim 1, further comprising:

signal generating means for generating effective width signals indicating a document contour on the basis of said document edge points point and

image forming means for generating an image within the document contour on the basis of image data outputted from said image sensor and said effective width signals.

18. (Currently Amended)   The image reading apparatus of claim 1, further comprising output substitution means for detecting the outside of a document contour of the image data outputted from said image sensor on the basis of said document edge points point, substituting the image data outside said document contour with a white image and outputting the data.

MAR - 7 2007

19. (Currently Amended)   The image reading apparatus of claim 1, further comprising image data substituting means for detecting the outside of a document contour of the image data on the basis of said document edge points ~~point~~, said image data stored in an image memory for storing said image data outputted from said image sensor, and substituting the image data outside said document contour with a white image.

20. (Previously Presented)   The image reading apparatus of claim 1, further comprising document image reading means for detecting a document contour of the image data on the basis of said document edge points, said image data stored in an image memory, and outputting the image data within said detected document image contour only.

21. (Previously Presented)   The image reading apparatus of claim 1, further comprising closing and opening detection means for detecting a document cover to prevent light from reaching said image sensor from outside and the opening and closing of said document cover and, in case the document cover is opened, actuates said contour detecting means.

22. (Currently Amended)   A processing apparatus for processing image data, comprising:

contour detecting means for detecting ~~a pixel as a probable edge point~~ pixels as probable edge points thought to be [[a]] document edge points ~~point~~ and an edge point of a projecting area where a light source outside the processing apparatus is projected, said ~~pixel~~ pixels having a higher quantity of change in density than a threshold value, and

MAR - 7 2007

contour correction means for determining whether [[the]] each probable edge point is a ~~document edge point indicating the position of a document edge~~ <u>the edge point of the projecting</u>

<u>area or not,</u> on the basis of the position of said probable edge <u>points</u> ~~point~~, said contour

correction means recognizing the probable edge <u>points except the edge point of the projecting</u>

<u>area as the document edge points</u> ~~point as the document edge point, upon determining the~~

~~probable edge point to be the document edge point~~.

23. (Previously Presented)   An image reading apparatus for processing image data

outputted from an image sensor, said apparatus comprising:

contour detecting means for detecting a pixel with the quantity of change in density

higher than a threshold value as a probable edge point thought to be a document edge point, and

contour correction means for recognizing the document edge point indicating the position

of a document edge on the basis of the position of said probable edge point, wherein

said contour detecting means is provided with judgement means for detecting an object

pixel as said probable edge point if the values of the respective pixels are identical when the

densities of a specific number of consecutive pixels either in the direction of scanning or

opposite direction of scanning are binarized on a specific slice level,

when each reading line is scanned in a specific direction and the density values of a

specific number of consecutive pixels in the opposite direction of scanning from said probable

edge point are binarized on a specific slice level, said judgement means recognizes said probable

edge point to which the values of the respective pixels are identical and judges as a first probable

edge point the probable edge point first recognized out of recognized probable edge points, and

MAR - 7 2007

wherein when each reading line is scanned in a specific direction and the density values of a specific number of consecutive pixels in the direction of scanning from said probable edge point are binarized on a specific slice level, said judgement means recognizes said probable edge point to which the values for the respective pixels are identical and judges as a second probable edge point the probable edge point first recognized out of recognized probable edge points.

24. (Previously Presented)   An image reading apparatus for processing image data outputted from an image sensor, said apparatus comprising:

contour detecting means for detecting a pixel with the quantity of change in density higher than a threshold value as a probable edge point thought to be a document edge point, and

contour correction means for recognizing the document edge point indicating the position of a document edge on the basis of the position of said probable edge point, wherein

said contour detecting means is provided with judgement means for detecting an object pixel as said probable edge point if the values of the respective pixels are identical when the densities of a specific number of consecutive pixels either in the direction of scanning or opposite direction of scanning are binarized on a specific slice level, and

when the densities of a specific number of consecutive pixels either in the scanning direction or the opposite direction of scanning from the object pixel are binarized on a specific slice level in an object image of which the density change quantity is regarded by said density change calculating means as less than said threshold value and not lower than a second threshold value which is less than said threshold value and in case the values of the respective pixels after binarization are identical, said judgement means detects said pixels as tentative probable edge points.

'MAR - 7 2007

REMARKS

Claims 1-24 are pending in this application, of which claims 1 and 22-24 are independent. Applicants acknowledge, with appreciation, the Examiner's allowance of claims 23 and 24. Applicants also acknowledge, with appreciation, the Examiner's indication that claims 4-6, 9, 11 and 14 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In this Amendment, claims 1, 3, 4, 5, 7-15, 17-19 and 22 have been amended. Care has been exercised to avoid the introduction of new matter. Adequate descriptive support for the amendments of claims 1 and 22 should be apparent throughout the originally filed disclosure as, for example, the depicted embodiments and related discussion thereof in the written description of the specification. Claims 4, 5, 9, 11 and 14, indicated to be allowable, have been amended to be in independent form. Claims 3, 7, 8, 10, 12, 13, 15 and 17-19 has been amended to improve wording.

Claims 1, 2, 7, 8, 10, 12, 13, 15-20 and 22 have been rejected under 35 U.S.C. §102(b) as being anticipated by Sugiura.

The Examiner maintained her position on the rejection of these claims under 35 U.S.C. §102(b). In response, Applicants have amended independent claims 1 and 22, reciting that the contour detecting means is configured for detecting probable edge points thought to be a document edge point, and an edge point of a projecting area where a light source outside the apparatus is projected. The claims further recite that the contour correction means is configured for determining whether each probable edge point is the edge point of the projecting area, and

15

recognizing the probable edge points except the edge point of the projecting area as the document edge points.

Sugiura does not disclose, at minimum, detecting the projecting area wherein the shape of light source outside the apparatus is projected. Sugiura detects edge points of a document and edge points of an image area in the document. Neither the edge points of the document nor the edge points of the image area in the document are the edge points of the projecting area.

In Sugiura, the edge points of the image area in the document are determined by detecting the density changes from the white level to the back level (column 5, line 52 to column 7, line 26). When the change of the density from the white level to the black level is detected in step P110 of Fig. 6(a), it is decided in step P121 that the present position of the pointer is set to a left edge of the image area (column 6, lines 51 to 58). In addition, when the change of the density from the white level to the black level is detected in step P140 in Fig. 6(b), it is decided in step P151 that the present position of the pointer is set to a right edge of the image area (column 7, lines 23 to 26). The right and left edges are not the edges of the document, but the edges of the image area in the document (column 5, line 67 to column 6, line 6).

In Sugiura, the edge of the document is decided by detecting the change of the density from the black level to the white level (column 5, line 52 to column 7, line 11). When the change of the density from the black level to the white level is detected in step P102 in Fig. 6(a) (column 6, lines 29 to 43), the left edge of the image area in the document is determined in the step following the step P110. Furthermore, when the change of the density from the black level to the white level is detected in step P132 of Fig. 6(b) (column 6, line 64 to column 7, line 11), the right edge of the image area in the document is determined in the step following step P140. Sugiura in column 5, lines 61 to 65 describes that the surrounding area of the document is the

16

black frame. In steps P100 and P130, the positions of the pointers are set to the top position and

the bottom end of the CCD 20, respectively (column 6, lines 22 to 26; and column 6, lines 61 to

63). As far as the document does not reach from the top position to the bottom end of the CCD

20, the black level outside the document is detected before the white level in the document is

detected.

Based on the above discussion, as well as Fig. 2 of Sugiura, it is apparent that neither the

edge of the document nor the edge of the image area in the document is the edge of the

projection area. "The location of the edge of a document" in column 5, lines 57 to 58 of Sugiura

is the point where the density changes from the white level to the black level, and indicates the

edge of the image area in the document.

Moreover, even if Sugiura detects the change of the density from the black level to the

white level in steps P102 and P132, Sugiura does not teach how to determine the edge of the

document by excluding the edge points of the projecting area from the detected points, as

claimed. When Sugiura detects the change of the density from the black level to the white level,

it determines whether the point is the edge of the image area in the document as mentioned

above. However, Sugiura does not determine whether the detected point is the edge of the

document. As shown in Figs. 1 and 6 of the present application, the projecting area 103 may

extends from the document area 104. It is, thus, necessary to determine whether the detected

points are the edge points of the document by excluding the edge points of the projecting area

from the detected points, as claimed. Sugiura does not disclose what is claimed.

Based on the foregoing, Applicants submit that Sugiura does not identically disclose an

image reading apparatus and a processing apparatus including all the limitations recited in

independent claims 1 and 22, respectively, within the meaning of 35 U.S.C. §102. Dependent

claims 2, 7, 8, 10, 12, 13 and 15-20 are also patentably distinguishable over Sugiura at least because these claims respectively include all the limitations recited in independent claim 1. Applicants, therefore, respectfully solicit withdrawal of the rejection of claims 1, 2, 7, 8, 10, 12, 13, 15-20 and 22 under 35 U.S.C. §102(b) for lack of novelty as evidenced by Sugiura, and favorable consideration thereof.

Claim 3 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Sugiura in view of Houjiyou et al.

In response, Applicants submit that claim 3 is patentably distinguishable over Sugiura and Houjiyou et al. at least because the claim includes all the limitations recited in claim 1. Specifically, Houjiyou et al. does not disclose determining whether the detected points are the edge points of the document by excluding the edge points of the projecting area from the detected points. Accordingly, Houjiyou et al. does not cure the deficiencies of Sugiura set forth above.

Applicants, therefore, respectfully solicit withdrawal of the rejection of claim 3 under 35 U.S.C. §103(a) and favorable consideration thereof.

Claim 21 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Sugiura in view of Migita et al.

In response, Applicants submit that claim 21 is patentably distinguishable over Sugiura and Migita et al. at least because the claim includes all the limitations recited in claim 1. Specifically, Migita et al. does not disclose determining whether the detected points are the edge

MAR - 7 2007

points of the document by excluding the edge points of the projecting area from the detected

points. Accordingly, Migita et al. does not cure the deficiencies of Sugiura set forth above.

Applicants, therefore, respectfully solicit withdrawal of the rejection of claim 21 under 35

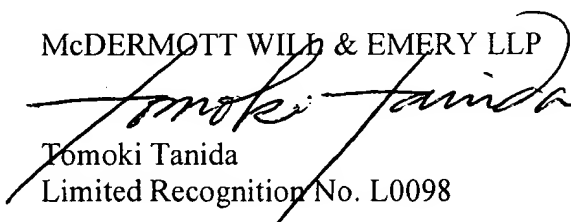U.S.C. §103(a) and favorable consideration thereof.

Conclusion

It should, therefore, be apparent that the imposed rejections have been overcome and that

all pending claims are in condition for immediate allowance. Favorable consideration is,

therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is

hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

including extension of time fees, to Deposit Account 500417 and please credit any excess fees to

such deposit account.

Respectfully submitted,

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MAR - 7 2007